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WHAT THE FOREST SERVICE DOES

U. S. Department of Agriculture • Forest Service
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Forest Service Responsibilities

The Forest Service of the U.S. Department of Agriculture is dedicated to the principles of multiple-use management of the Nation's forest resources for sustained yields of water, forage, wildlife, wood, and recreation. Through management of the National Forests and National Grasslands, cooperation with the States and private forest owners, and forestry research, it strives—as directed by Congress—to provide increasingly greater service to a growing Nation.

The Secretary of Agriculture has assigned to the Forest Service the major responsibility of providing leadership in the management, protection, and utilization of the natural resources on all the Nation's forest and related rangelands, which cover one-third of our Nation's surface. This delegation of duties extended the basic activities of the Forest Service beyond the management of the National Forest System as authorized in the Organic Administration Act of 1897.

Included in this delegation of duties are:

Participation on the local and national level in designating national priorities in proper land use,

Formulation of selected programs that carry out broad management objectives,

Establishment of a pattern of cooperative Federal forestry policies and programs whose cost-sharing provisions with the respective States will assure the maximum contribution of environmental, social, and economic benefits to present and future generations.

Forest Service activities that accomplish these objectives include three major areas of operation:

1. **Management**, protection, and development of the 187-million-acre National Forest System to produce a continuous flow of economic and social values from the water, forage, wildlife, wood, and recreation resources thereon.
2. **Cooperation** with State foresters, owners of private forest lands, wood processors, and private and public agencies. This cooperation extends the Nation's forest inventory by improving the quality and increasing the quantity of goods and services produced, through more scientific management and utilization of timber resources.
3. **Research** functions that directly or indirectly support the above activities and the management of the country's forest and rangelands in general.

I. Management of National Forests and National Grasslands

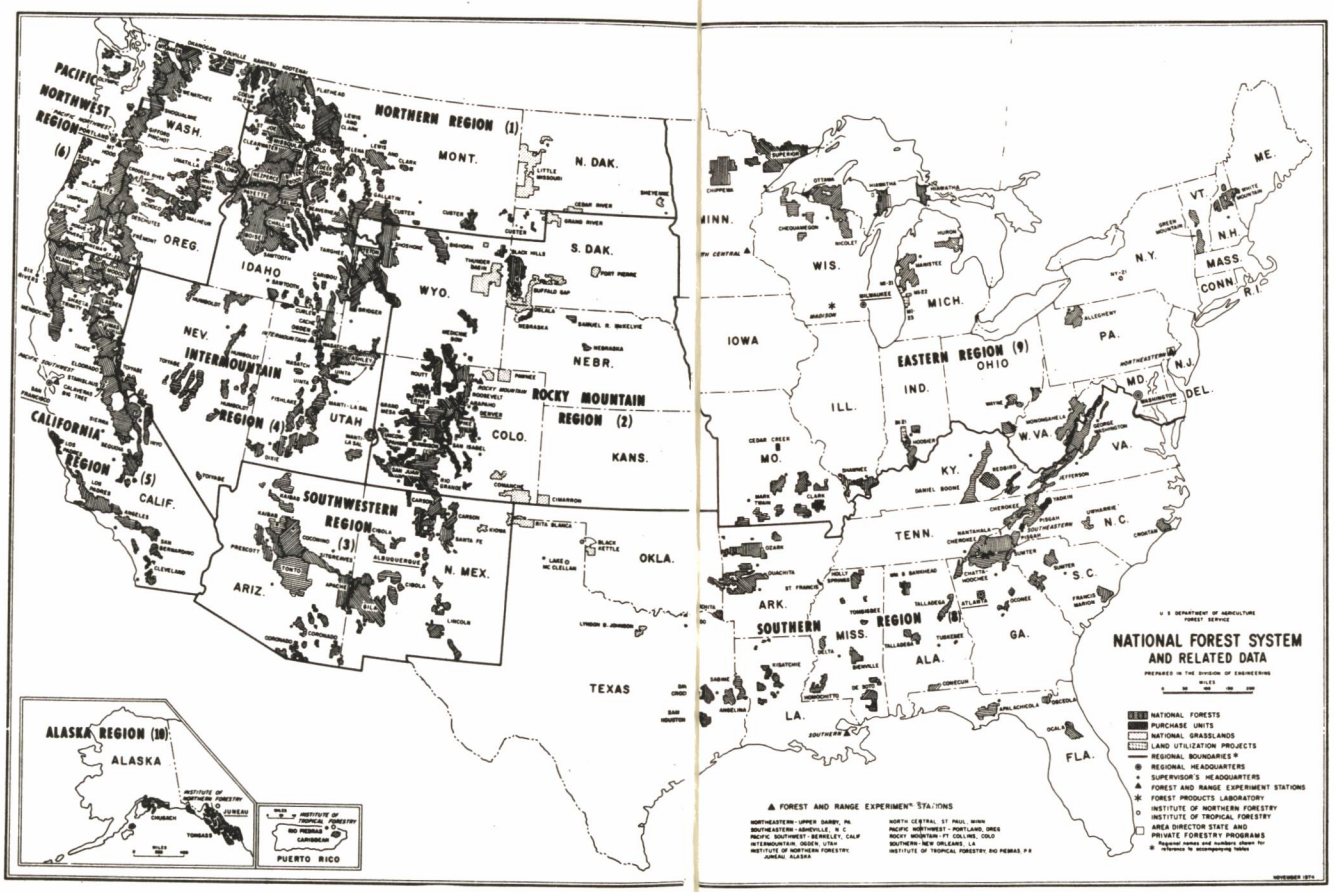
The 155 National Forests, 19 National Grasslands, and 17 Land Utilization Projects managed by the USDA's Forest Service include 187 million acres of land located in 44 States, Puerto Rico, and the Virgin Islands. The natural resources contained in these lands represent some of the Nation's greatest assets and have major economic, environmental, and social significance for millions of Americans.

RESOURCES TO BE MANAGED

Products or services provided from National Forest System lands involve five primary resources: **Timber, Water, Forage, Wildlife,** and **Recreation.** In addition, mining is allowed on many of these lands, under certain conditions. All of these resources are managed under the MULTIPLE USE-SUSTAINED YIELD concept to provide the maximum benefit for the greatest number of people, now and in the future. This concept was established firmly by Gifford Pinchot, the Nation's first Chief Forester, and has since been reaffirmed aggressively by his several successors.

Water

Much of the Nation's water supply flows from National Forest System lands. Use of these lands and their associated water resources is constantly expanding and intensifying, which has led to increasing emphasis on broad, interdisciplinary planning for protection and improvement of the water resource as a vital element of the environment. Included in the planning process is the identification of needs and opportunities for enhancing streamflow characteristics, controlling floods and erosion, and improving water quality. Watersheds are managed to help assure an adequate supply of high-quality water to meet the growing demands of agriculture, industry, and the American public.



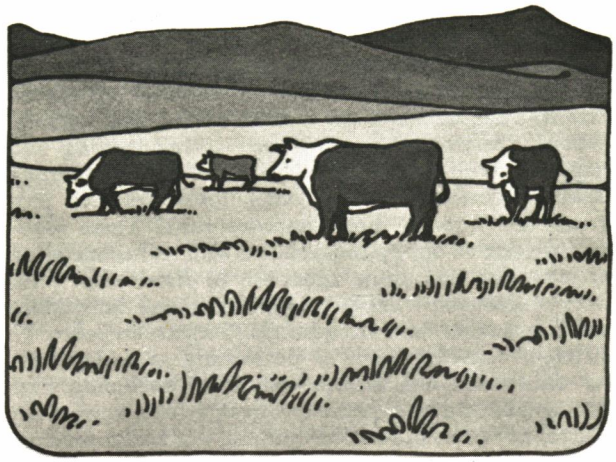
Lands laid barren by wildfire receive prompt remedial attention. Immediate first-aid treatment is also applied to critical portions of burned areas to safeguard water resources and to help reduce erosion and downstream flooding. During fiscal year 1973, such emergency treatment was applied to 52,000 burned acres of National Forest System lands.

In fiscal year 1973, Forest Service crews also treated and stabilized 36,000 acres of sheet eroded and deteriorated areas and 350 miles of eroding streambanks and gullies.

Forage

Forage resources are managed to conserve the land and its natural vegetation while providing food for both domestic livestock and wildlife populations. Although forage production is a primary use of rangelands, grazing areas now have a significant potential for increasing their watershed, wildlife, and recreation values under multiple-use management concepts.

Under a permit system, grazing privileges are granted to qualifying ranchers on all forest ranges within the National Forest System, including the 3.8 million acres of National Grasslands. Forecasts are made of forage needed from National Forest range, and plans are made to produce this forage in the most efficient manner. Over 1.5 million head of cattle and 1.7 million sheep were grazed on National Forest System lands in fiscal year 1973 under permit arrangements with private ranchers and farmers. About 20,000 rural families, mostly small operators in the Western States, hold renewable grazing privileges for which an annual fee is charged. Thirty-three percent of the permittees own less than 50 head of cattle. Ranchers depend upon seasonal grazing from Federal lands to "round out" their



year-long forage supply. Proper grazing use of privately owned forest land is facilitated through cooperation between State agencies and the Forest Service. The Forest Service carries out intensive programs for rehabilitating forest range areas of low productivity to increase the Nation's potential for forage production.

Changing economic trends indicate that grass-fed cattle going directly to market from rangeland may furnish more of America's future red meat supply. The Forest Service manages over 14 percent of the Nation's 1.2 billion acres of forest range, 69 percent of which are in non-Federal ownership. A special task force recently completed a forest-range environmental study of the Nation's forest range. The published study indicates management alternatives for 34 major ecosystems for different target levels under selected political, social, environmental, and economic constraints.

The Forest Service also shares responsibility with the Bureau of Land Management in the administration of a recent Act providing or the protection of wild and free-roaming horses and burros on public rangelands.

Wildlife

Fish and wildlife populations in the National Forests and National Grasslands are managed in cooperation with the fish and game departments of the States to keep their numbers in balance with available food and shelter. Another objective of wildlife management is to provide optimum opportunity to sportsmen, bird and animal watchers, photographers, and students for enjoyment of our fish and wildlife resources as they exist in their natural habitats. Hunting and fishing are allowed on National Forest System lands and are subject to the same State game laws that apply to other lands. While National Forest lands comprise less than one-

twelfth of the country's total area, they contain about 50 percent of the Nation's big game. The 83,000 miles of forest streams, 1.8 million acres of natural lakes, and 880,000 acres of artificial reservoirs likewise provide an excellent habitat for many species of fish and wildlife.

Forest Service programs aimed at maintaining and improving fish and wildlife habitats are accomplished through coordination with other forest resource programs and through direct improvements. These activities are carried out by consultation with and cooperation of State fish and game agencies. In fiscal year 1973, work on fish and wildlife projects improved the wildlife and fish habitat on 541,694 acres. Projects included 27 different activities, such as developing spawning beds for fish, stabilizing stream channels, developing new fishing lakes, blasting potholes for waterfowl, developing sources of water, prescribed burning, protection fencing, and other conservation measures.

Top priority is given to maintenance and improvement of habitats for the 39 endangered fish and wildlife species that are found on or near National Forest System lands. In calendar year 1973, wildlife resources on these lands attracted 15,761,000 visitor-days of fishing and 14,232,000 visitor-days of hunting. In addition, several million visitor-days were spent in the enjoyment of such "nonconsumptive" pleasures as wildlife photography and bird watching.

Wood

Trees covered half of the American continent when the first settlers arrived. Even today, after three centuries of intensive economic and social use that pushed the Nation's frontiers westward, forests still clothe one-third of our country's 2.3 billion acres. These remaining 754 million acres of timberlands include 500 million acres of renewable commercial forest, occupying 22 percent of the Nation's land area. Commercial forests are those on sites whose stable soils, favorable climatic environment, and location favor the continuing production of large volumes of high quality timber as a dominant land use. About 10 major commercial tree species occur on these timberlands. They furnish the Nation with the lumber and plywood needed to meet increased housing and industrial demands and the paper products required for packaging, domestic use, and printed or personal communications.

Approximately 60 percent of the Nation's commercial forest lands is in farm and miscellaneous small private ownerships (nonindustrial); 13 percent is owned by industrial timber companies; and 9 percent is in public ownership other than Forest Service.

Of the 187 million acres in the National Forest System, 91.9 million are identified as commercial timberland, comprising roughly 19 percent of the Nation's commercial forests. However, largely because of substantial areas of old growth and overmature public forests in the Pacific Northwest, the National Forests contain 52 percent, by volume, of the Nation's standing softwood timber. Some 27 percent of the Nation's annual softwood timber harvest comes from these lands. This harvest provides the primary lumber and plywood used in housing and a wide range of other wood products, such as pallets. The National Forests contain about 8 percent of the Nation's hardwood sawtimber volume and provide about 3 percent of the annual harvest.

National Forest timber is managed on a sustained yield basis to produce a continuous supply of raw material to meet the country's economic demands. Timber is harvested on each National Forest in accordance with a timber management plan in which the sustained yield harvest has been calculated and identified on the ground by areas or working circles. Timber management plans are revised periodically (usually every 10 years) to reflect changes in inventory, utilization, and environmental objectives. Major and more immediate changes affecting workable timber inventories may be incorporated in the plan as they occur.

Timber management plans also describe in general terms the kinds of silvicultural and logging systems to be employed in harvesting. More efficient systems, such

as balloons, helicopters, and skyline cables, facilitate reforestation and protect other resource values. Timber management, including prudent timber harvests, can be a useful tool to help attain management objectives for forested watersheds, wildlife areas, and recreation sites.

In the preparation of individual timber sales, trained foresters prescribe the specific silvicultural and harvesting systems appropriate for the particular ground conditions involved, and determine the protective measures to be included in the timber sale contract.

National Forest timber is sold by competitive bidding at publicly advertised sales. It is bought and harvested by private timber companies, operating under the terms specified in written timber sale contracts. Enforcement of these terms is closely supervised in the field. Details of harvesting systems, road building standards, and site restoration measures are specified. In fiscal year 1973, some 11.1 billion board feet of timber were offered at public sales.

Gross receipts from all uses on National Forests since their establishment in 1905 exceeded $4.1 billion in 1973. Net proceeds are deposited in the U.S. Treasury after deductions provided for by law. One-fourth of the total income from National Forests receipts is returned directly to the States where National Forests are located. These funds are allocated to the counties for building schools and roads, in lieu of tax monies. In fiscal year 1973, total receipts from the National Forests reached a record $469.7 million, resulting in substantial returns to the States. Timber sale income in fiscal year 1973 totaled $446.8 million, also a record.

Our national appetite for wood products has jumped 70 percent during the past 30 years. Reports by the Forest Service and special task forces indicate that the United States will face even greater demands for forest products by the year 2000, particularly for softwoods. In order to boost the timber output from National Forest lands, more intensive management measures must be applied to avoid shortages in timber supply. These measures include: Release harvests and thinnings in young timber stands, salvage operations, reforestation of old burns, genetic improvement of planted tree species, fertilization, and harmonized with construction of more roads serving multiple-use purposes.

Recreation

Meeting our Nation's increased demands for more opportunities to relax and enjoy recreation experiences in a pleasing forest environment has imposed special problems on forest managers because of the public's changing life styles. America's leisure time interests include a wide variety of outdoor activities: sightseeing nature jaunts on foot or by bike or auto, 1-day picnic outings, weekend camping safaris, more extended backpack trips into remote wildernesses, or the chance to attend special interest programs at a visitors' information center. Demand is surging for water-oriented recreation opportunities with facilities for boat launching, fishing, and water skiing.

In the winter, America's skiing enthusiasts flock to the popular commercial skiing areas, most of which are located on National Forest lands. Hunting and fishing continue as perennial favorites. In calendar year 1973, the combination of all recreation attractions resulted in 188 million visitor-days of use on the National Forests (a visitor-day represents the equivalent of 1 person using recreational facilities, or hunting and fishing, for 12 hours or 12 persons for 1 hour).

Many of the recreation opportunities in our National Forests are provided by trails, streams, woodlands, and the natural forest environment. However, the USDA's Forest Service has developed a wide range of accessible facilities for the convenience of those who camp, picnic, boat, swim, or participate in winter sports. As of June 30, 1974, the Forest Service maintained 6,413 developed campground and picnic sites, 322 swimming sites, 857 boating sites, and 216 winter sports sites. Capacity of these developed sites is over 1.37 million persons at one time.

The Forest Service recognized the importance of wilderness in 1924 by establishing the Nation's first such area in New Mexico. Now more and more visitors are being attracted to the 10.7 million acres of designated wilderness included in 65 units within the National

Forest System. An additional 3.8 million acres in 23 Primitive Areas is being considered by Congress for inclusion in the National Wilderness Preservation System. Recently, 12.3 million acres of roadless areas, located in 274 units in 15 States, were proposed for further study as possible wilderness additions. Furthermore, a special Wilderness System is being established for the Eastern United States. Wilderness trips provide appealing adventures in solitude. However, some of the especially popular areas may develop erosion and sanitation problems caused by overuse of ecologically sensitive sites. More restraints in public use may be needed here to protect the soil and water resources and the environment.

Minerals

Mining activities on National Forest System lands contribute significantly to the Nation's industrial economy. The annual return from the production of mineral resources on National Forests has an estimated value of over $100 million at the mine or wellhead. The management of these resources is closely associated with watershed management activities. That's because the possible disturbance of surface soils and vegetation as a result of mineral exploration and production could affect the quantity and quality of water flow.

Control and management of mining activities is in accordance with regulations promulgated and enforced by the Department of the Interior. This function is delegated to Interior by the 1872 U.S. Mining Laws, which apply to all federally owned lands, including 140 million acres of the National Forest System. However, under the provisions of an interdepartmental agreement

covering selected mining activities (including the production of oil, gas, and coal), and for most all mining on acquired lands, the Forest Service may recommend appropriate conservation measures to be followed by a private operator in conducting mining activities so as to protect other forest resources. This responsibility, along with the need for minerals and geologic information in developing broad land-use plans, requires considerable activity by minerals specialists.

The Forest Service, in cooperation with the Department of the Interior, is also required to prepare a minerals and geologic report covering all National Forest areas being studied for possible designation as units in the National Wilderness Preservation System. Mining is authorized as a legitimate activity within Wilderness by the Wilderness Act of 1964.

SERVICES THAT SUPPORT MANAGEMENT

Fire Management

The Forest Service provides direct fire protection and control on the 187 million acres of the National Forest System and cooperative control on 23 million acres of associated lands. In calendar year 1973, some 12,424 fires occurred on these lands, of which 6,048 were man-caused. A total of 168,692 acres was burned. Fire control activities require substantial fire prevention efforts such as building of fire breaks and fire control access roads and also vegetation management, all carried out with environmental considerations in mind.

Organized informational efforts are directed at the public to reduce the incidence of man-caused fires on all forest lands. These efforts include posters, news

releases, fire weather warnings, and radio and TV messages.

Actual fire control requires massive support activities, such as radio communications, logistics, air and ground transportation, and other physical aids. A large project fire may require assembly, transport, and full logistical support for as many as 8,000 to 10,000 men within a 2- or 3-day time span. More important yet is the prompt rehabilitation work required to protect fire-damaged areas against soil erosion, so that they will regreen as soon as possible.

The fire management function is carried on with the full realization that some planned fires controlled by man may have a place in shaping desirable ecological successions on an area. Typical examples are: the conversion of brushlands to seeded grasses, fires to develop desirable breeding grounds for wildlife species, and fuel reduction projects, such as slash burning.

Forest Transportation System

An extensive transportation system of forest roads and trails is required to provide access for recreation, hunting and fishing, timber management, and harvest operations, as well as grazing, mining, fire management, and forest administration. Without the construction and maintenance of these facilities, many of the benefits of National Forest lands would be unattainable.

In fiscal year 1973, approximately 9,340 miles of roads and 250 miles of trails were constructed or reconstructed. Purchasers of Federal timber constructed or improved 8,996 miles of roads; the remainder were constructed by the Forest Service. This brought the total mileage of permanent roads within the National Forests to 201,307 and the total mileage of trails to 96,393.

Engineers and trained specialists are also active in planning, placing, and operating dams, buildings, ski lifts, boat ramps, generating plants, power transmission lines, water systems, and sewer systems on National Forest lands. These facilities are required for management purposes and public use, or are under permit for commercial use. Environmental considerations require careful design and location of all installations to harmonize their appearance with that of nature.

The Forest Service employs the Nation's largest work force of landscape architects hired by any single U.S. agency or organization. These skilled technicians help assure that management installations, timber harvest, road construction, trail location, range improvements, and other management activities on the National Forests maintain a pleasing environment that is in harmony with sound conservation practices.

Informing and Involving the Public

A growing public concern about environmental matters, along with steadily increasing demands on all forest resources, has stimulated public interest in securing more detailed information about and more involvement in matters relating to forest land management. To respond to this interest, the Forest Service sponsors several major activities which seek better public understanding of natural resource issues and environmental management.

These include the *Environmental Education Program* which places special emphasis on involving educators, resource people, and citizen groups in developing techniques and skills of investigating the environment, the *Inform and Involve Program* aimed at gaining increased public understanding and involvement in reaching decisions on natural resource matters and issues, and the *Woodsy Owl Program* designed to create public awareness of pollution and environmental improvement problems and solutions. Through these and several other activities, the Forest Service seeks to broaden cooperative efforts with groups, organizations, and individuals from all professions to assure them that our forest resources and the natural environment will continue to serve the needs and desires of America for future generations.

PLANNING FOR THE FUTURE

In administering its multiple-use programs for water, forage, wildlife, wood, and recreation values, the Forest Service considers our Nation's intensified concern for maintaining environmental quality. However, the public's needs for forest products and other goods and services obtained from the National Forest System have

not diminished. In fact, environmental concern and product demands have accelerated almost simultaneously. This has made the decision-making process for allocating or blending of resource uses even more challenging. The goal is to fulfill the needs and desires of the many National Forest users, such as skiers, hunters, fishermen, ranchers, loggers, campers, and picnickers, within the land use capabilities of a given area.

In the early 1960's, the Forest Service developed and sent to Congress development programs for the National Forests and for research that established supply objectives for the next decade. In 1970, following enactment of the **National Environmental Policy Act,** the Forest Service adopted a set of broad policy guidelines and objectives to help chart future program direction. Called **"Framework for the Future,"** the statement was issued by the U.S. Department of Agriculture as a conservation Magna Carta in resource administration.

Subsequently, other inventory reports by special commissions and task forces analyzed demand and supply factors for timber, range, wilderness back country, recreation, roadless areas, and other natural resources. Interdisciplinary teams of Forest Service specialists cooperated to share their expertise in blending management guidelines and project plans. Inputs from public involvement contributed greatly to decisionmaking. Both the public and the Forest Service saw the need for a more comprehensive analysis of the resource situation, with a definitive statement on potential outputs of goods and services.

This stimulus and Congress' growing concern with long-range forest management led the Forest Service to draft an **"Environmental Program for the Future,"** (EPFF) released in draft form in June 1974. Immediate planning was for the 10-year period, 1975–84. However, actions taken or not taken during this period would affect programs beyond 1984. The draft did not fix rigid targets, budgets, or land allocations. It considered projected future demands on resources, population growth, advancing technology, changes in personal life styles, and increases in income levels.

The draft EPFF identifies three alternative levels of effort for each of six basic resource systems—low, moderate, and high. The primary difference among the three alternative supply programs is in the amount of goods, services, and amenities which can be produced under each.

The low supply alternative would continue Forest Service program activity at about the 1973–74 level. Because of increasing demands, the end result would be a *reduction* in supplies.

The moderate supply alternative would maintain the same rate of increase in resource protection and output that has occurred in the previous decade. The Forest Service would provide about the *same proportion* of goods and services as in the past.

The high supply alternative would boost appreciably both protection and resource outputs and broaden the balance of Forest Service programs. The result would be a substantial *increase* in goods and services furnished.

Comments were received from the public for consideration in preparing the final draft.

The public was asked to comment on the alternative levels of activities. Over 23,000 pages of public comments on the EPFF were received and analyzed by the Forest Service. The **Forest and Rangeland Renewable Resources Planning Act** (PL 93-378), also referred to as the Resources Planning Act (RPA), was passed in August 1974. The draft EPFF document and the public comments on it will both be used as a basis for development of RPA.

RPA calls for long-range planning by the Forest Service to insure that the U.S. has an adequate supply of forest resources in the future while maintaining the quality of the environment.

The Act goes into great detail, but two major requirements emerge. The Forest Service must periodically submit to Congress a Renewable Resources Assessment and a long-range Renewable Resources Program. Both of these documents are due for the first time on December 31, 1975.

The Renewable Resources Assessment must consider all forest, range, and related lands in the United States. The first Assessment will probably be modeled on the timber trends reports, but will be expanded to include all forest resources. To gather data on a more intensive basis, and to cover all forest resources, the forest survey authorization has been raised from $5 million to $20 million.

The Assessment must include:

1. An analysis of the present and anticipated uses, demand for, and supply of renewable resources, including a consideration of the international resource situation.

2. An inventory of present and potential renewable resources, and opportunities for improving their yield of goods and services, with estimates of the investment costs and returns to the Federal Government.

3. A description of Forest Service research and cooperative programs, and the management of the National Forest System, including the relationship of these programs to public and private activities.

4. A discussion of important policy considerations, laws and other factors which might affect the use,

ownership and management of forest, range and related lands.

The first assessment is due December 31, 1975, and is to be updated in 1979, and every ten years thereafter.

The Renewable Resources Program is to be a long-range plan for all Forest Service programs, including the National Forest System, Research and State and Private efforts.

The Program must include:

1. An inventory of specific needs and opportunities for both public and private program investments.
2. Specific identification of program outputs and the anticipated results and benefits of Forest Service programs.
3. A discussion of priorities for acomplishing these opportunities, with specified costs, outputs, results, and benefits.
4. A detailed study of personnel requirements needed for existing programs.

The first program is due December 31, 1975, and must cover the four-year period beginning October 1, 1976, and at least each of the four fiscal decades following. The program must be updated every five years, always planning at least 45 years ahead.

The Act also calls for clearing up backlogs in such practices as reforestation, timber stand improvement and range improvements on National Forest System land. The target date for clearing up these backlogs is the year 2000, although the bill does not define specifically what Congress would consider a backlog.

Detailed outlines for the total report, including both the Assessment and the Program, were published in February 1975. An analysis of public comments on the EPFF was also published.

Several opportunities for public review are provided throughout development of RPA. In February 1975, detailed outlines were presented to the public, our analysis of public responses on EPFF were described, and an explanation was given on how EPFF will be "folded in" in the development of the Renewable Resources Program.

In March 1975 the second public involvement effort was launched with a public review of draft alternative goals. These were developed for each Resource System. They formed the basis for development of various alternatives covering total Forest Service Programs.

The first drafts of the assessment and program documents were planned for completion in August 1975. At that time, the drafts were to be made available for public review.

The final assessment and program documents were to be delivered to Congress by December 31, 1975.

II. Cooperative Activities with State and Private Forest Owners

Through cooperative programs with State and local governments, forest industries, and private landowners, the Forest Service assists in the protection, management, and use of 574 million acres of forest and associated watershed lands. By cooperating with Federal and State agencies, private forest owners, processors of forest products, and community leaders and organizations, the Forest Service seeks to increase job opportunities and raise incomes of rural people.

Assistance is provided to improve fire control and protection of forests from insects and diseases; in land-use planning, to develop multiple-use management so as to obtain the maximum use potential from forest resources; and to improve practices in harvesting, processing, and marketing of forest products.

FIRE AND PEST CONTROL

All 50 States have cooperative agreements in the *Cooperative Forest Fire Control Program* for protecting approximately 700 million acres of valuable wildland. Each State is responsible for protecting these lands within its borders and for providing the needed organization, training, manpower, and equipment. The Forest Service provides financial and technical assistance. A part of the fire prevention thrust is the *Smokey Bear program* to prevent man-caused wildfires. Under agreements with the Canadian Forestry Association and the Advertising Council, Inc., the forest fire prevention campaign receives more than $40 million worth of free time and space in the mass media each year.

Another responsibility of the Cooperative Fire Control Program is *Rural Community Fire Protection,* a part of the Rural Development Act of 1972. This authorizes the Forest Service to provide technical and financial assistance to State foresters, on a 50-percent matching basis, for planning, training, and buying equipment for protection of lives and structures by local fire-fighting forces.

Under the *Forest Pest Control Act,* Federal and State governments cost-share in a cooperative *Forest Pest Action Program* to detect and evaluate insect and disease damage. Thirty-eight States now participate in this cooperative program. In addition, Forest Service specialists provide technical assistance to the States in insect and disease management to minimize losses. This same group of specialists is responible for prevention, detection, evaluation, and suppression activities on Fed-

eral lands, and coordinates management efforts on lands of all ownerships.

WOODLAND MANAGEMENT

The Cooperative Forest Management Program provides technical assistance from State and Federal sources to private forest landowners, forest operators and processors, and public agencies. Management assistance to private forest landowners is aimed at developing all rural as well as urban forest resources to their maximum potential consistent with wise conservation practices.

The more than 4 million owners of the 300 million acres of nonindustrial private forest land in the United States represent almost 60 percent of the Nation's total commercial forest land, and in the future must produce more than half of the Nation's timber needs.

During 1973, about 900 foresters employed by 50 cooperating States, Puerto Rico, and the Virgin Islands assisted 106,000 woodland owners, involved with 6.5 million acres of land. Gross returns received by these woodland owners for forest products harvested were $37.7 million.

General Forest Assistance funds are used by the Forest Service to accomplish highly specialized forestry assistance, such as giving advice on sawing and harvesting procedures. During 1973, assistance was provided in response to 8,000 requests from public and private agencies, industries, and individuals.

Under the *Tree Seedling Program,* all States and the Virgin Islands cooperate with the Forest Service to establish forest and shelterbelt plantings on State and privately owned lands.

Through this seedling program, almost 639 million trees were produced by 87 State-owned nurseries for planting on over 1.75 million acres in 1973. Cooperative tree improvement projects to develop higher quality stock are planned or are currently in operation in 26 States.

Cooperative programs in watershed development and flood prevention are carried out with State forestry agencies, the Soil Conservation Service, and water conservation districts. Technical assistance is provided for gully stabilization, fire control, timber stand betterment to improve hydrologic conditions, and other forest-related watershed improvements.

Under the *Rural Environmental Conservation Program,* the Forest Service has technical responsibilities and the Agricultural Stabilization and Conservation Service has administrative responsibilities for a program of cost-sharing with eligible private forest landowners for certain approved forestry practices. The Government may pay up to 75 percent of actual cost. All technical services in the field are performed by the State forestry agencies. A total of 400,000 acres of private land can be planted to improve the Nation's forest resources.

PL–566 WATERSHED PROGRAM

The Forest Service has forestry responsibility for the *Watershed Protection and Flood Prevention Program,* popularly known as the "Small Watershed Program" or the "PL–566 Program." The purpose of this USDA project-type program is to provide increased watershed protection and flood control through an accelerated land treatment program and structural measures. Forest Service participation ensures that all forest and forest rangelands are evaluated and considered from a multiple-use standpoint in solving resource, environmental, and socioeconomic problems in multiple-purpose watershed projects. Coordination between units within the Forest Service, the State Forester, the Soil Conservation Service, the local sponsors, and other State and Federal agencies is an important activity in each project.

PL–534 FLOOD PREVENTION PROGRAM

USDA-assigned responsibilities for flood control are designed to provide for the installation of watershed improvement measures to prevent floods; reduce floodwater, sedimentation, and erosion damages; and further the conservation, development, utilization, and disposal of water.

These responsibilities have been delegated to the Forest Service on all National Forests and on other lands administered by the Forest Service, and for all other forest lands. Nine active flood prevention projects are now in operation.

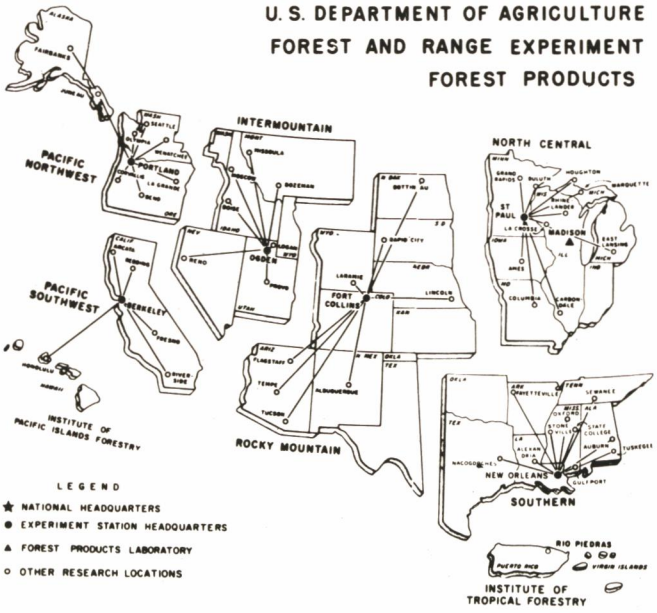
The *River Basins Program* is the principal instrument for expressing, guiding, and coordinating water resource planning. This is a comprehensive activity involving several Federal departments, organized in the Water Resources Council under the Water Resources Planning Act (PL 89–80), with the States, the Federal-State River Basin Commissions, and Interagency Committees participating. An entire series of liaisons is established and maintained with interested agencies, organizations, or bodies.

A basic Forest Service objective in river basin programs is to ensure the proper role for the socioeconomic potentials of private-public forest land in comprehensive planning. Through *Cooperative Area Planning,* the Forest Service seeks to provide specialized forestry representation and information that will assist State and sub-State planners. Local policies and decisions are critical to forest resource concerns. The program aims at full forest and related resource contribution and consideration in the land-use planning process.

III. Research to Support Forest-Related Activities

The Forest Service operates the world's largest forestry research organization. At land grant institutions research plans of the Forest Service are coordinated through the Department of Agriculture under the Hatch Act, and at forestry schools with research conducted under the McIntire-Stennis Act. Coordination of Forest Service activities with research carried on by other educational institutions, public agencies, and private enterprises is maintained mostly through direct contact between personnel of these organizations and those of the Forest Service's regional experiment stations. Cooperative agreements provide for the joint development and support of research and draw upon the special talents and facilities of many organizations.

Forest Service research covers diversified and important subject matter. Nearly every activity includes a complete range of disciplines—biological, physical, economic, and the social sciences—that solve complex problems involving forest and related ecosystems and their relationship to urban and rural areas. The ultimate goal of research is to protect the Nation's natural resources; gain the maximum conservation, economic, and social benefits from their use; and leave the environment unspoiled.



FOREST MANAGEMENT RESEARCH

Most of the technology now used in the management of public and private forest and rangelands can be attributed to discoveries made in recent years by Forest Service or cooperating scientists. Forest Service researchers study the establishment, improvement, growth, and harvesting of timber; protection of forests from fire, insects, diseases, and animal pests; management of rangelands; improvement and management of wildlife habitats; forest recreation; protection and management of watersheds; efficient marketing and utilization of forest products; forest engineering; and forest economics.

Research projects are extremely varied. A continuing forest survey made every decade provides comprehensive information on the extent and condition of forest lands, the volume and quality of timber resources, trends in timber growth and harvest, and the long-range outlook. In late 1973, findings were published for the 1970 timber review, under the title "Outlook for Timber in the United States." The survey projects supply and demand estimates for timber products through the year 2020. The report forecasts a shortage of softwood sawtimber supplies for that year and suggests alternative actions to alleviate the deficit.

In forest genetics, trees are being bred that are better able to resist insects, diseases, and air pollution. Special

emphasis is being given to the replacement of persistent pesticides through manipulation of biological and natural controls, safe and more efficient application of microbial agents, and use of more selective and less persistent chemicals not hazardous to other forms of life.

Improvement of big game habitats is being sought with studies of plant palatabilities. Wilderness research analyzes the changing desires of users and determines how to meet their demands without site deterioration. The socioeconomic values of outdoor recreation are being evaluated. Range resources are being inventoried more accurately through a system of aerial color photography. Forage production as related to systems of timber harvesting is receiving attention. Environmental problems are now of major importance. They include the use of trees and shrubs to muffle unwanted noise and to serve as live screens; development of mining technology aimed at minimizing the use of stripping systems in production of coal and oil; and rehabilitation of lands scarred by fires, floods, and mining activities.

The use of new fire management techniques to improve environmental quality includes control of smoke emissions from prescribed fires by correlation of burning periods with favorable meteorological conditions, proper location and design of fuel breaks in brushy areas, and more effective application of prescribed fires to gain certain management objectives, such as fuel reduction. Remote sensing techniques have been developed that are useful in fire suppression. They also permit identification of insect attacks and root rot centers in Douglas fir-western hemlock forests.

Improvement of engineering systems for harvesting timber in more remote and steeper areas has been emphasized in research because of environmental considerations. Balloon, helicopter, and skyline cable systems are being tested widely. Regional symposia on these systems help disseminate information. Tables, diagrams, and formulas have been developed to calculate the capability of each system under various conditions.

WOOD UTILIZATION RESEARCH

Miracles in stretching America's wood supply are occurring at the Forest Service's world-famous U.S. Forest Products Laboratory at Madison, Wis., where the Federal Government's activities in wood research are centralized. Scientists who probe the extended uses of wood as a renewable resource know that in strength, durability, and cost wood can compete successfully with practically all other structural building materials. The Forest Products Laboratory estimates that increased utilization of wood residues, use of thinner sawblades, better dry-kiln management, computerized sawmilling,

development of new products, and other similar measures can help reclaim up to 6.6 billion cubic feet of raw material each year from an estimated 9.6 billion cubic feet that are not fully used.

As an example, production of lumber from logs involves cutting rectangular pieces out of a circle. Key to maximum lumber yield from any size log is the width of the opening face and position of the first saw cut. The Forest Products Laboratory has developed a computer program which determines for each log diameter the width and position of the first saw cut made on the log, so as to yield the most lumber products. Results indicate use of this Best Opening Face (B.O.F.) System can recover at least 10 percent more lumber than is currently being obtained from small logs.

Much of our wood supply is used once or more, but has a potential for still further use, through economically feasible recycling processes. Efforts have been concentrated on the reuse of waste paper, rich in cellulose wood fibers. Recovery of half the wood fiber consigned to trash would have 30 million cords of pulpwood annually. It's estimated that 70 percent of our annual paper consumption could be "recaptured" for economic recycling. End products are printing papers, corrugating medium, structural hardboards, and perhaps even livestock feed. The pulp and paper industry already is recycling about 19 percent of its total production.

In housing, Forest Service scientists have made many significant contributions. A series of low-cost rural housing plans has won wide acceptance by architects and builders concerned with meeting the demand for functional and livable residences. The all-weather wood foundation system, using pressure-treated plywood-sheathed stud walls below grade, permits builders to do foundation work in any weather and offers many cost advantages. A current "Com-ply" cooperative research project has the potential for doubling the recovery of usable wood products from a tree. "Com-ply" is a composite lumber material made from solid wood facings (veneer) glued on particleboard centers. "Com-ply" uses the high-strength outer wood from a log as the facing and the inner portion for particleboard. Over 90 percent of the log ends up in high-value products.

IV. Human Resource Development

MANPOWER AND YOUTH CONSERVATION PROGRAMS

Development and conservation of human resources is as important as conserving natural resources. No program can be successful without stimulating people. The Forest Service depends on basic forestry activities to motivate people and help minority, economically depressed, elderly, handicapped, and youth groups.

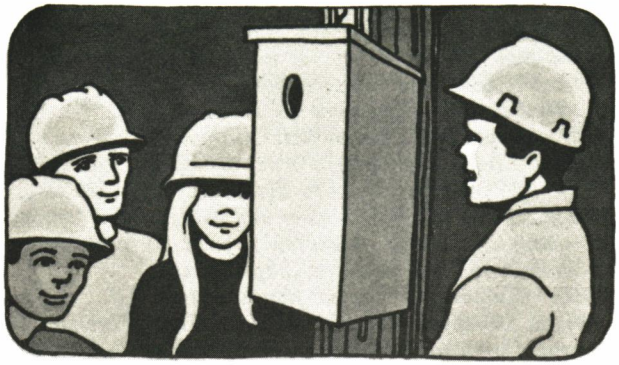
Cooperative manpower programs in which the Forest Service participates are authorized by the *Comprehensive Employment and Training Act* of 1973. Under an agreement with the Department of Labor, the Forest Service operates 17 JOB CORPS CIVILIAN CONSERVATION CENTERS. Annually, Forest Service Civilian Conservation Centers provide education and vocational skills training to some 8,000 disadvantaged 16– to 21–year-old youths. The vocational skills training program includes 46 training programs conducted by five construction trade unions. These Job Corps union training programs are placing in jobs more than 90 percent of the Corpsmen who complete training, at an average starting wage of $3.41 per hour.

Other cooperative work-training programs in which the Forest Service participates include OPERATION MAINSTREAM for older Americans, NEIGHBORHOOD YOUTH CORPS, and COLLEGE WORK STUDY. These programs provide some 1,500 man-years of work and training to several thousand enrollees hosted by the Forest Service each year.

The Forest Service, in cooperation with the Department of the Interior, administers the YOUTH CONSERVATION CORPS as authorized by Public Law 92–597. This program accomplishes needed conservation work on Federal lands administered by the Secretaries of Agriculture and the Interior, as well as on other public lands under grants to the States. It provides more than 9,000 men and women participants, ages 15 to 18, from all walks of life, with the opportunity to learn more about their natural environment and heritage while gainfully employed during the summer.

Public Law 92–300, the VOLUNTEERS IN THE NATIONAL FOREST ACT OF 1972, permits concerned citizens to contribute their services to the improvement of the Nation's natural resources.

Through these human resource development programs, the National Forest resources also benefit from an estimated $15 million of conservation projects completed each year.



Major Legislation Authorizing Activities of Forest Service, U. S. Department of Agriculture

1891: Creative Act. *Created the National Forest System by authorizing the President to establish Forest Reserves, comprising forest and rangelands in the public domain.*

1897: Organic Administrative Act. *Provided for the protection and management of the Forest Reserves, within the Department of the Interior. Granted the right of entry to persons for prospecting, locating, and developing mineral resources, in accordance with provisions of the U.S. Mining Laws. Authorized the sale of dead, matured, or large growth of trees, at not less than appraised value.*

1905: Transfer Act. *Transferred the Forest Reserves from the Department of the Interior to the Department of Agriculture.*

1911: Weeks Law. *Authorized purchase of lands to be administered as National Forest lands, for timber production and regulation of flow of navigable streams.*

1924: Clarke-McNary Act. *Established basis for cooperation of the Forest Service with State Foresters in fire prevention and suppression, and in the procurement, production, and distribution of forest-tree seeds and plants for reforestation and afforestation purposes. Authorized aid to farmers in forestry activities.*

1928: McSweeney-McNary Act. *Authorized basic forestry research, providing for cooperation with others, and established Forest Service regional forest experiment stations, for conducting fire, silvicultural, and other forest-management investigations.*

1930: Knutson-Vandenburg Act. *Required purchasers of National Forest timber to deposit money, in addition to timber stumpage payments, to cover cost to the United States of replanting harvested areas and removing undesirable trees from the areas.*

1937: Bankhead-Jones Farm Tenant Act. *Established National Grasslands of 3.8 million acres, and authorized other land conservation and land utilization activities in management of acquired lands.*

1947: Forest Pest Control Act. *Authorized Secretary of Agriculture to cooperate with others in conducting surveys on forest lands to detect and appraise forest insect pests and tree diseases and to determine control measures. Control measures applied to non-Federal lands were to be financed cooperatively.*

1950: Cooperative Forest Management Act. *Authorized Secretary to cooperate with State Foresters in providing technical management and marketing services to private landowners and operators and wood processors.*

1955: Agricultural Experiment Stations Act. *Consolidated authorizations for appropriations of Federal funds to support agricultural experiment stations in States and territories and provided for regional projects.*

1960: Multiple Use-Sustained Yield Act. *Reemphasized basic concept that the National Forests are to be administered for outdoor recreation, watershed, range, timber, and wildlife and fish purposes. Reaffirmed the right to develop mineral resources.*

1962: Cooperative Forestry Research Act. *(McIntire-Stennis) Made funds available to States on matching basis to help carry out research at land grant institutions and State-supported forestry schools.*

1964: Wilderness Act. *Established the National Wilderness Preservation System. Nucleus of the system in 1964 was the 10 million acres of Wilderness that had been so designated by the Forest Service since 1924, when the Nation's first Wilderness was established in New Mexico. Provided for study of additional Wildernesses.*

1965: Land and Water Conservation Fund Act. *Established a system of financing Federal grants of monies to States for recreation and various recreation programs. The Forest Service and other Federal agencies were authorized to purchase lands and water areas primarily suited for recreational development. Funds were to be derived from motorboat fuels taxes, admission and user fees in National Park and National Forest areas, and surplus property sales.*

1968: National Trails Systems Act. *Established a national system of recreation and scenic trails and designated Appalachian and Pacific Crest Trails as initial components in system. Provided for studies leading to establishment of other national recreation and national scenic trails.*

1968: Wild and Scenic Rivers Act. *Designated certain rivers in Nation as having outstanding scenic, geologic, recreation, cultural, or other attributes meriting the retention of each river in a free-flowing condition, through protected corridors. Initial components were designated and study of other rivers provided for.*

1970: National Environmental Policy Act of 1969. *Declared it to be a national policy to encourage harmony between man and his environment and established a Council on Environmental Quality. Required all Federal agencies to prepare a report on environmental impact of planned programs or actions by the agency, and to suggest alternative actions.*

1970: Youth Conservation Corps Act. *Provided for the summer employment of youth from ages 15 to 18 and the establishment of regional Corps Centers. The youth so enrolled were to be employed for conserving, developing, preserving, or maintaining public lands administered by the Departments of the Interior and Agriculture.*

1973: Forestry Incentives Act. *Shared the cost of tree planting and forest management with small landowners. Federal share of these costs ranged from 50 to 75 percent, distributed through Agricultural Stabilization and Conservation Committees. Landowner had to have forest management plan for property, prepared through State Forester's office.*

1974: Forest and Rangeland Renewable Resources Planning Act (PL 93–378). *A planning and budgetary procedure act that required Forest Service to prepare long-range programs for the National Forest System for the next 40 years in 10-year stages. It included administration, roads and trails, research, and cooperative programs. Report due December 1975 from Secretary of Agriculture must give assessment of present and anticipated supply and demand needs, an inventory of present and potential resource opportunities, plus an annual progress report.*

1974: Woodsy Owl Campaign. *Authorized Secretary of Agriculture to license the manufacture and distribution of Woodsy Owl merchandise and to collect royalty fees for such licensed use, and to protect unauthorized use of the anti-pollution symbol.*

Give a hoot!
Don't pollute.

Revised April 1975

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U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

NATIONAL FOREST SYSTEM

Protects and manages 187.1 million acres:
- 183.0 million acres National Forests
- 3.8 million acres National Grasslands
- 432,517 acres of Land Utilization Projects, Purchase Units, Research and Experimental Areas, and others.

On these lands are:
- More than 4 million big game animals.
- 217.4 million cu. ft. of standing timber (1970)
- 39 endangered wildlife species.

Fiscal Year 1973 Income:
- $467.6 million from National forests as follows:
  - $446.8 million from timber sales
  - $5.4 million from grazing fees
  - $5.4 million from mineral receipts
  - $8.7 million from recreation admission and user fees

In Fiscal Year 1974:
- $114 million was returned to States

In Fiscal Year 1973:
- 12.4 billion bd. ft. timber harvested (under strict regulation)
- 13.6 billion bd. ft. allowable annual cut
- 1.5 million cattle grazed
- 1.7 million sheep grazed

581 million forest and windbarrier planting stock distributed, under cooperative programs

298,631 acres planted and seeded

52,190 acres of natural regeneration

354,414 acres of stand improvement

106.2 million tree seedlings produced in Federal nurseries

188 million visitor days recreational use (calendar year 1973)

452 miles of road constructed and reconstructed

9,827 miles of road constructed and reconstructed by timber purchasers

106,422 woodland owners assisted, affecting 6.5 million acres; 1.6 million bd. ft. of timber products harvested

13,579 fires promptly controlled

116,705 acres burned

9 Regions

155 National Forests*

19 National Grasslands*

17 Land Utilization Projects*

12 Nurseries*

682 Ranger Districts*

17 Civilian Conservation Centers

* ADMINISTERED BY 125 SUPERVISORS

MAJOR ACTIVITIES

RESEARCH

Through Science Produces Knowledge and Technology

for

Managing Resources
- Timber
- Water
- Range
- Wildlife Habitat
- Recreation

Protecting Resources
- Fire
- Insect
- Disease
- Pollution

Utilizing Wood Resources
- Wood Products
- Marketing
- Engineering Systems

Plus

Resource Surveys and Related Economics

8 Forest and Range Experiment Stations

1 Forest Products Laboratory

1 Institute of Tropical Forestry

70 Other Research Locations

325 Research Projects

3,700 Individual Studies

1,112 Scientists

1,300 Publications Annually

COOPERATION

With

State and Private Owners

on 574 Million Acres

To

Meet the Needs of an Expanding Population

Through

Providing Protection

Reforestation (1.3 Million Acres in 1972)

Increasing Forest Yields

Utilizing Forest Products

Reducing Wood Waste

Conserving Soil and Water

Providing Forest Recreation

Enhancing Natural Beauty

Increasing Fish and Wildlife

2 Areas, 7 Regions, and Institute of Tropical Forestry

Cooperation with 50 States, Puerto Rico, and the Virgin Islands

Public Agencies, Community Development Organizations, and Forestry Industry

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WASHINGTON, D.C. 20250

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